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THE MARIN COUNTYWIDE PLAN



TRANSPORTATION
ELEMENT

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TRANSPORTATION ELEMENT

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I. INTRODUCTION

The Transportation Element discusses the history of transportation planning within Marin County, describes the factors which have led to the existing conditions on the roadways and public transit, and recommends policies and programs to provide an effective transportation system in the future. The primary purpose of this element is to recommend policies and programs which will resolve the transportation requirements of Marin from a countywide perspective.

A. LEGAL AUTHORITY

Section 65302 (b) of the California Government Code requires that general plans contain a circulation element "consisting of the general location and extent of existing and proposed major thoroughfares, transportation routes, terminals, and other local public utilities and facilities, all correlated with the land use element of the plan."

B. RELATIONSHIP WITH OTHER GENERAL PLAN ELEMENTS

The Transportation Element is closely linked with the Community Development Element to ensure that both land use and transportation policies are consistent and mutually reinforcing. The projected amount of development (called "buildout") shown in the Community Development Element was tested against the recommended transportation system. The system is designed to accommodate buildout as shown in the Community Development Element of this plan. Projections of vehicle counts and vehicle miles traveled will be used to show the impact on air quality that will shape air quality policies and programs in the Environmental Quality Element. Projections of vehicle counts will also be tested for their noise impacts and will shape policies and programs in the Noise Element.

C. RELATIONSHIP TO OTHER GENERAL PLAN DOCUMENTS

This element is supported by five technical reports:

Transportation Element Technical Report #1 The Transportation System and Transportation Modeling: Describes the concepts and terms used in transportation planning and discusses the modeling process.

Technical Report #2 Travel Patterns in Marin and Sonoma Counties: Describes the results of a travel behavior survey of Marin and Sonoma County residents, including the number of trips generated and location of the origin; destination; trip type; and mode of trips taken during the peak commute period and hour.

Technical Report #3 Existing Conditions: Assesses the performance of the transportation system in 1987, the base year for transportation modeling,

and discusses the level of service on the freeway and local road intersections, transit ridership, paratransit service, capital improvements, and trends in travel behavior since 1980.

Technical Report #4 Transportation Impacts of the Preferred Land Use Alternative: Describes the results of a modeling exercise which takes the total potential development of the county (the buildout) plus year 2010 development from other Bay Area counties and assigns the travel demand to a transportation system recommended in this plan.

Technical Report #5 Bicycle Transportation in Marin: Discusses the bicycle as an alternate form of transportation for Marin County with recommended policies and capital improvements needed for completion of a countywide bicycle facility network.

D. ORGANIZATION OF THE ELEMENT

This element is organized chronologically, beginning with a description of the County's historic approach to transportation issues, policies in earlier plans, and past achievements. Next, the element covers current transportation planning efforts and recent trends leading to the existing conditions. Section II includes discussions of the system performance of Highway 101, local arterials, transit, and paratransit. Section III presents the results of modeling the land use projections in the Community Development Element with the recommended transportation system. The transportation system improvements needed to complete this system are shown in a Capital Improvements Program, along with an estimate of their costs and potential funding sources. The final section of this element details County objectives and policies, and the programs recommended for implementation of the policies.

E. POLICY HISTORY

The transportation policies of the 1982 Countywide Plan originated in the 1973 Countywide Plan. In the 1973 plan, County residents and elected officials decided to make a fundamental break from earlier policies governing community development and transportation.

Relatively rapid growth during the 1950s and 1960s had produced undesirable impacts on the county, particularly in terms of environmental quality. Projected growth would have resulted in severe traffic congestion unless additional freeways and major arterials were built. At the time, freeway extensions were proposed for State Route (SR) 1, Shoreline Highway, between Tamalpais Valley and Point Reyes, for Interstate 580 between San Rafael and Point Reyes, and for Highway 37 between Novato and Point Reyes. Traffic from projected development would have necessitated widening Highway 101 to eighteen lanes at the Golden Gate Bridge. Proposals for a second bridge to San Francisco or an additional deck on the Golden Gate Bridge were under consideration. Marin residents

opposed the projected level of growth by downzoning land, primarily in West Marin, to very low density agricultural uses; acquiring land for parks and open space; and opposing proposals for new freeways.

Policy emphasis in 1973 shifted from accommodation of the automobile to provision of transit alternatives. Transportation policies in the 1973 plan called for limiting the expansion of Highway 101 to eight lanes and creating an exclusive transit route for buses on the Northwestern Pacific Railroad right-of-way parallel to the freeway. Policies called for greatly expanding transit while not significantly expanding the street system in order to maintain levels of mobility and serve additional trip generation.

The 1982 Plan policies continued and expanded upon 1973 Plan policies, with emphasis on substitution of transit service and carpool lanes for road widenings. The relative scarcity and high price of gasoline during the late 1970s reinforced the County's desire to seek alternatives to single-occupant automobiles as the primary mode of transportation. Policy consideration of alternate modes of transportation extended to carpools, vanpools, bicycles, and walking. Examples of policies included: "Increased use of carpools should be encouraged, with a goal of 100% expansion for local travel and 50% expansion for transbay trips from the rates found in 1980" and "Bicycle use and walking should be encouraged as significant modes of transportation and should be encouraged for shorter daily trips to work, shopping, and other activities." Other policies called for expanded transit service, including ferry service to San Francisco, and completion of two High Occupancy Vehicle (HOV) lanes, carpool lanes, from the Richardson Bay Bridge through Novato. The Northwestern Pacific Railroad right-of-way was designated as a transportation corridor. The 1982 Plan mentioned rail use of the right-of-way, but deemed development of the right-of-way inappropriate until after the HOV lanes were completed.

F. PRIOR EMPHASIS AND ACHIEVEMENTS

1. Implementation of the 1982 Countywide Plan

At the time the 1982 plan was written, the country was slowly recovering from an "energy crisis," resulting from high gasoline prices and uncertain supply. As the decade of the 1980s progressed, the energy crisis dissipated because gasoline supplies increased and gasoline prices fell relative to other prices.

Commuting patterns shifted as a result of suburban job growth. With gasoline prices remaining low, commuters chose to drive alone, rather than take transit or carpool. Although the 1982 Countywide Plan called for increased transit and carpooling, the use of transit and carpooling did not increase in the 1980s. The result was a large number of vehicles on the roads, more vehicles than some roads could accommodate during the morning and evening peak commute hours. Traffic congestion worsened because sufficient funding was not available to increase the capacity of the highway system.

Lack of funding has limited the expansion of transit service, bike lane construction, and carpool programs, in addition to limiting the possibility of road expansion to accommodate the automobile. Only modest improvements were made to the roads during the 1980s with pre-programmed local, State, and Federal funds. The 1982 Transportation Element was explicit about the need for additional funding and the document stated: "New sources of funding must be found; if they are not, serious congestion problems will occur in the next decade." New sources of funding were not found and the congestion occurred as predicted.

Transportation system improvements achievable within limited available funds followed the policies of the 1982 plan and included: road widening, freeway interchange improvements, better signalization on local streets, increased transit service, and bikeway construction.

Since adoption of the 1982 plan, the most serious bottleneck in the transportation system for northbound traffic has been relieved by expanding the capacity of Highway 101 between Central San Rafael and the Civic Center. In addition, seven miles of dual High Occupancy Vehicle (HOV) lanes on Highway 101 have been constructed between North San Pedro Road and Highway 37 in Novato. Initial funding has been allocated for HOV lanes between Interstate 580 and North San Pedro Road in San Rafael. Funding has also been allocated for auxiliary lanes which parallel the HOV lanes between North San Pedro Road and Miller Creek Road and northbound between Sir Francis Drake Boulevard to Interstate 580. Highway 101 interchange improvements have been made at the intersections of Tamalpais Drive, Rowland Boulevard, Tiburon Boulevard, Ignacio Boulevard, and Seminary Drive. Several arterial streets have been widened, generally for the purpose of installing left turn lanes and, in a few cases, to create more traffic lanes. Traffic signals have been upgraded to improve traffic flow along Sir Francis Drake Boulevard. A connector road was completed linking Los Ranchitos Road to Lincoln Avenue in San Rafael. This road provides a much needed parallel route to Highway 101, in case of emergency or severe traffic congestion.

The Marin County Transportation System Management Task Force drafted a Transportation System Management (TSM) program between 1987 and 1989, in an effort to encourage more carpooling and transit use. To implement the program and create a TSM Agency for administration of the program, a TSM ordinance was written and a joint powers agreement drafted for the local governments. The next step in implementing the program is submission of the Joint Powers Agreement and ordinance to the cities and County for approval. To date, no funding is available for implementation of the program.

Local transit, service has suffered from a lack of stability in funding. The serious decline in ridership during the early 1980s was partially due to inadequate funding. Since 1984, additional service has been provided through an annual infusion of \$600,000 of County general funds to create a \$1.4 million package. Ridership on local routes has been steadily improving since 1984, the year it reached a historic low. Transbay transit service to San Francisco experienced a sharp decline in ridership between 1980 and 1990.

2. The Highway 101 Corridor Study and Sales Tax Expenditure Plan

The Highway 101 Corridor Study, undertaken between 1983 and 1989, was a six-year effort to devise a strategic transportation improvement plan for the transportation corridor through Marin and Sonoma Counties. Officials from local governments in Marin, Sonoma, and San Francisco Counties, and officials from regional and State agencies studied alternatives for meeting the transportation needs of all three counties in a 20-year time period. The committee undertook an extensive evaluation of highway improvements, increased bus and ferry service, and several rail transit options. It concluded that the most effective and acceptable transportation solution for the three counties would be a combination of increased bus and ferry service, completion of the High Occupancy Vehicle (carpool) lanes on Highway 101, rail transit linking Marin and Sonoma Counties, and no additional vehicle capacity on the Golden Gate Bridge. The Committee submitted this recommendation to the elected officials of Marin and Sonoma Counties as the "Preferred Alternative."

In August of 1989, Marin elected officials created a Marin County Transportation Authority to draft a Sales Tax Expenditure Plan, in preparation for proposing a sales tax increase to the voters. The Transportation Authority was to implement the Plan if the tax were approved by the voters. The proposed Sales Tax Expenditure Plan included the recommendations from the Highway 101 Corridor Study Committee in addition to the following features:

- Increased paratransit service for Marin residents with special transportation needs;

- A Transportation System Management Program to reduce travel demand;

- A local "set aside" to provide funding for local streets and roads and local transit service; and,

- A countywide planning agency to manage growth, establish traffic mitigation fees, and achieve traffic Level of Service standards.

The Transportation Authority submitted the Sales Tax Expenditure Plan to the voters in November of 1990. The voters turned down the proposed sales tax increase.

G. CURRENT TRANSPORTATION PLANNING EFFORTS

The Transportation Element provides a framework for transportation planning efforts in Marin County. It describes deficiencies in the existing system, recommended improvements to achieve level of service standards, funding requirements, potential sources of funding and alternatives for minimizing impacts on the transportation system

until recommended improvements are in place. Implementation of this plan requires a consensus among Marin County residents as to what should be done and what funding sources should be used. Both the Highway 101 Corridor Study and the Congestion Management Agency provide forums for the public to achieve consensus and implement a plan.

1. The Highway 101 Corridor Study

After the defeat of the sales tax measure, the Highway 101 Corridor Study Committee reconvened to consider alternate solutions to transportation problems in the North Bay. The Committee is deliberating about modifications to the previously adopted transportation plan and whether to recommend placing another transportation improvement plan before the voters.

2. The Congestion Management Program

The passage of Propositions 111 and 116 in June 1990 triggered State legislation that requires county governments in urban areas to designate a countywide public agency to create, administer, and update a countywide Congestion Management Program (CMP). The purpose of the Congestion Management Program is to establish level of service standards on designated freeways, state highways and local arterials and maintain or achieve those standards by increasing the capacity of those roads and/or managing travel demand upon them. The incentive for each city to participate in the program includes receipt of the additional gas tax revenue from Proposition 111, receipt of bond funds from Proposition 116, receipt of State Transportation System Management funds and eligibility for state and federal funds programmed by the Regional Transportation Improvement Program (administered by the Metropolitan Transportation Commission). If a local government fails to comply with the Congestion Management Program, the Congestion Management Agency may direct the State to withhold funds and declare local projects ineligible for State or Federal funding.

The County and eleven cities designated the Countywide Planning Agency as the Congestion Management Agency. The Agency adopted a CMP in May, 1992. Under the provisions of CMP legislation, local governments are required to adopt a Trip Reduction Ordinance, monitor traffic impacts on an annual basis, and adopt a seven year Capital Improvement Program (CIP). The transportation improvements recommended in the Countywide Plan are consistent with the Capital Improvement Program adopted under the Congestion Management Program. The Congestion Management Agency determines if local governments are in compliance with the Congestion Management Program on an annual basis.

II. EXISTING CONDITIONS

A. HIGHWAY 101 AND SELECTED ARTERIALS

The existing transportation system (1991) meets the needs of Marin County travelers for the majority of trips, during most hours, everyday of the week. However, significant congestion does exist on a limited number of streets at peak travel hours. Significant congestion currently exists during morning and/or afternoon peak hours on two segments on Highway 101, major portions of Sir Francis Drake Boulevard, and about half a dozen other streets. A more detailed description of these conditions follows and major transportation routes are illustrated in Figure TR-1.

The term "peak hour" is defined as the sixty minute period during which the greatest number of vehicles flow across a given point on a road (as compared to other sixty minute periods). There is no particular hour designated as the "peak." Vehicle counts on local roads and the freeway are reported in 15 minute intervals. Four contiguous intervals are added to produce the sixty minute period. The actual time of the peak hour varies according to a variety of factors such as day of the week and location of the counting device. For example, the peak hour along Highway 101 in Sausalito may be 4:30 p.m. to 5:30 p.m. The peak hour in Novato may be 4:45 p.m. to 5:45 p.m.

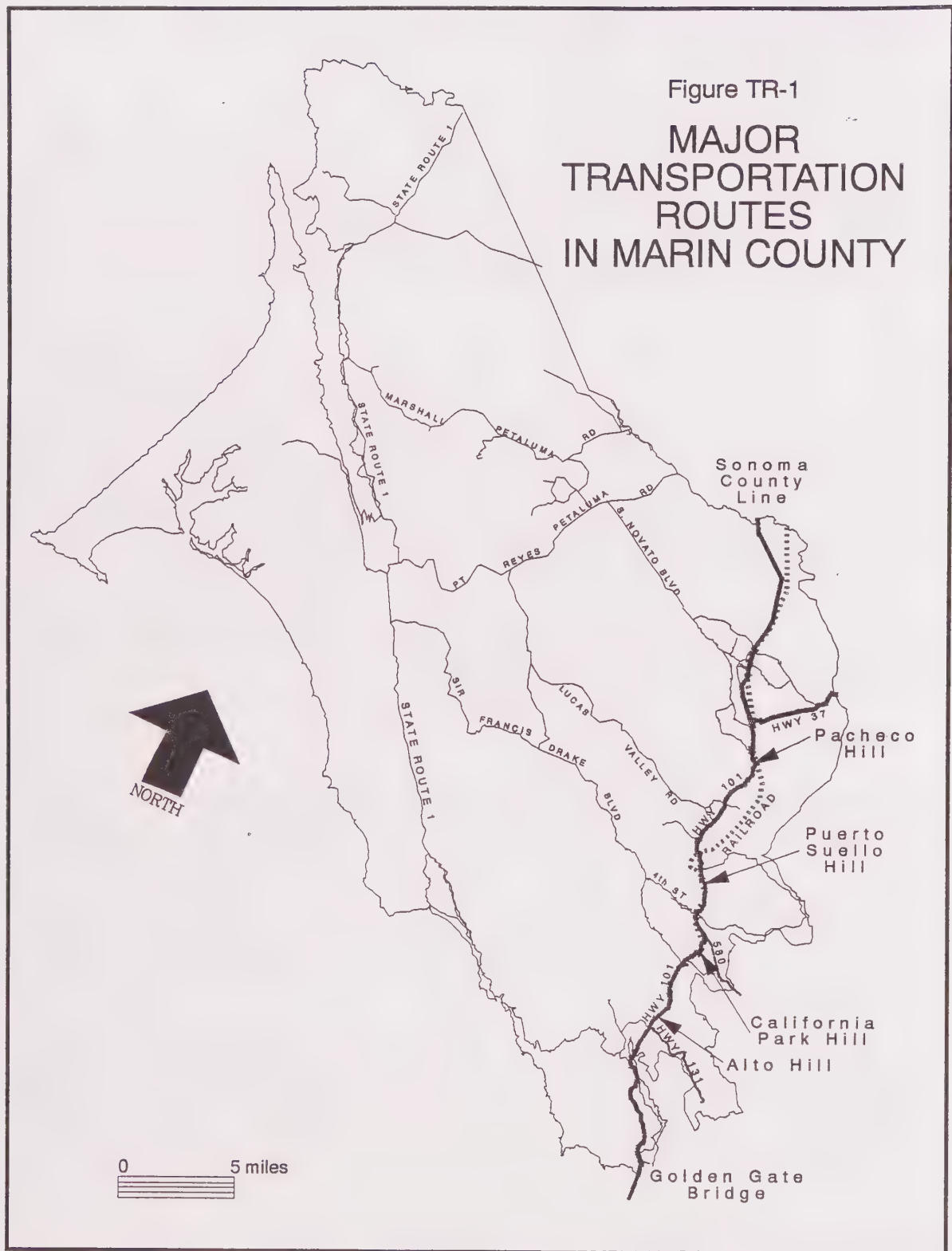
The term "peak period" refers to the two or three hours of greatest traffic flow, depending on local conditions. The peak period is produced by adding contiguous 15 minute intervals until a 120 minute or 180 minute interval is reached.

1. Level of Service on Highway 101

Level of Service is a concept used by traffic engineers to describe the amount of congestion which occurs on a freeway or city street. Service levels are ranked in grades from A to F with Levels A or B indicating little or no congestion and levels E and F indicating severe congestion and long delays for motorists. Level of Service is determined by the ratio of the traffic volume to available roadway capacity (V/C Ratio). A full description of Level of Service and V/C Ratio is given in Technical Report #1: The Transportation System and Transportation Modeling.

Table T-1 shows the existing afternoon peak hour V/C Ratio and Level of Service at selected points on Highway 101. The points at which the counts were made along Highway 101 are called screenlines. They are the entrances to the county at the Golden Gate Bridge and Sonoma County line in addition to the hills that separate the Planning Areas of the Countywide Plan. Pacheco Hill is between Marinwood and Novato. Puerto Suello Hill is between Downtown San Rafael and Terra Linda. Cal Park Hill is between the Larkspur Landing Ferry Terminal and Downtown San Rafael. Alto Hill, also known as "Horse Hill", is between Mill Valley and Corte Madera.

Figure TR-1
**MAJOR
 TRANSPORTATION
 ROUTES
 IN MARIN COUNTY**



A review of Table T-1 shows that Highway 101 has Level of Service F, severe congestion, at Cal Park Hill between Larkspur and San Rafael during the evening peak hours. Along this portion of the highway, demand for space exceeds capacity. Northbound Highway 101 narrows from four lanes to three and many vehicles enter from Sir Francis Drake Boulevard. The effect is that traffic backs up into Corte Madera and moves very slowly through San Rafael.

Recent counts also show a backup in the northernmost portion of the county. Highway 101 also experiences congestion during morning peak hours at Puerto Suello Hill near the Civic Center. Southbound traffic backs up to Freitas Parkway and occasionally as far north as Marinwood at morning peak hours.

**Table T-1. Level of Service on Highway 101
Existing (1991), Evening Peak Hour**

| Screenline | Volume/Capacity Ratio | Level of Service |
|--------------------|-----------------------|------------------|
| Marin/Sonoma line | .92 | D |
| Pacheco Hill | .90 | D |
| Puerto Suello Hill | .87 | D |
| Cal Park Hill | 1.10 | F |
| Alto Hill | .80 | D |
| Golden Gate Bridge | .88 | D |

Sources: The 1991 counts at the Golden Gate Bridge and Sonoma County line were made by DKS Associates in preparation of the Congestion Management Program. Other counts were made in 1987 by Caltrans for the Highway 101 Corridor Study.

2. Level of Service on Selected Arterials

Arterials are signalized streets that primarily serve through traffic and provide limited access to adjacent property. An arterial may be a width of two, four, or six lanes, depending on the volume of traffic it is designed to carry. Major arterials are usually divided by a median strip, have a limited number of driveways, and typically serve traffic volumes of 10,000 to 50,000 vehicles per day. Secondary arterial streets may not be divided and usually serve traffic volumes of 5,500 to 20,000 vehicles per day. The number of lanes, on-street parking, driveways, and regulation of traffic at intersections have an effect on traffic flow on arterials.

Using the counts of traffic volume and estimated capacity of the arterial segment between two intersections, traffic engineers can determine Level of Service on an arterial segment. A more precise measurement of service level can be determined for intersections using detailed traffic turning movement data.

While most arterials in the county operate with limited congestion in 1991 (Level of Service D or better), significant peak hour congestion occurred on a daily basis in several areas. This analysis focuses on streets in the unincorporated area of the county and includes only a limited discussion of congested streets within city limits in 1991.

The arterials in the unincorporated areas of the county with Level of Service F in 1991 include:

Shoreline Highway (SR 1) from Highway 101 to Flamingo Road in Tamalpais Valley; and,

Sir Francis Drake Boulevard from Highway 101 to Bon Air Road in Greenbrae.

The City of Larkspur has a general plan policy prohibiting the widening of Sir Francis Drake Boulevard through the Greenbrae area and recognizes that the existing service level F condition will continue into future years. The policies of this plan are consistent with the policies of the Larkspur General Plan.

Arterial streets within city limits which operate at Level of Service E or F in 1991 include:

East Sir Francis Drake Boulevard from Highway 101 to the Larkspur Ferry Terminal in Larkspur;

Sir Francis Drake Boulevard through the Towns of Ross and Fairfax and the City of San Anselmo;

Bellam Boulevard at I 580 and Irwin Street at 5th and Mission Streets in San Rafael;

Bel Marin Keys Boulevard at Nave Drive, South Novato Boulevard from Rowland to Arthur Street, and Novato Boulevard from Diablo to Seventh Street in Novato.

In summary, most arterial streets operate with limited congestion, Level of Service D or better, in 1991. The factors which contribute to the congestion experienced on portions of Highway 101 and on some arterial streets during the morning and evening peak commuter hours are:

- 1) a large increase in the number of jobs in Marin;
- 2) greater reliance on the automobile as a mode of travel;

- 3) greater geographic dispersion of jobs and housing; and,
- 4) an increase in the number and percentage of people working.

The 3.4% growth in the population of Marin County from 1980 to 1990 has had a negligible influence on traffic congestion.

B. PUBLIC TRANSIT SERVICE

The majority of both local and transbay public transportation service is provided by the Golden Gate Bridge District. The six types of transit service are: Basic, Commute, Recreational, Ferry Feeder, Local, and Special. *Basic service* consists of four routes upon which buses travel all day, seven days a week, serving selected areas of Marin and transporting passengers to the Transbay Bus Terminal and the Civic Center in San Francisco. *Commute service* operates on seventeen neighborhood routes in Marin and Sonoma counties with service to the San Francisco Financial District and Civic Center. These buses operate only during commute periods. *Recreational service* is limited to two routes serving park and recreation areas, primarily in West Marin, on Saturdays and Sundays. *Ferry feeder service* consists of twelve routes which connect selected neighborhoods with the Larkspur, Tiburon, and Sausalito ferries. As with commute service, these buses operate only during the morning and afternoon commute periods. *Local Service* is provided under contract with the Marin County Transit District and several school districts. Twelve local service routes take Marin residents to various points within Marin County, but not to San Francisco. *Special Service* is provided on five routes for sporting events, fairs, and other infrequent events.

The Golden Gate Bridge District operates two ferry routes, one between Larkspur and San Francisco and one between Sausalito and San Francisco. Red and White Ferries operate commute services between Tiburon and San Francisco and also provide recreational services to Sausalito and other points around San Francisco Bay.

Privately owned transit service is provided from several points in Marin to the San Francisco International Airport and between San Rafael and Richmond.

C. PUBLIC TRANSIT RIDERSHIP

Statistics from the Golden Gate Bridge and Highway District show that transit ridership for both trips to San Francisco and trips within Marin has declined since 1980. Bus ridership into San Francisco declined 37% during the morning commute period between 6 a.m. and 10 a.m., from 9,907 passengers in fiscal year 1980 to 6,971 in 1990. Ferry ridership dipped somewhat during the early 1980s but has increased in recent years. Ferry ridership reached 1,728 passengers in 1980, dipped to 1,053 in 1983, and rose to 1,797 by 1990. In 1990, buses carried 21% of the transbay commuters and ferries carried 4.7%. The loss in transit ridership during the morning commute was due to decreased automobile operating costs (e.g. lower gasoline prices, ample affordable parking) as well as reduced transit

service and increased transit fares. While transit ridership decreased, the number of people driving alone to San Francisco increased from 14,903 in 1980 to 17,264 in 1990. The number of two- and three-person carpools has been declining. Between 1980 and 1990 average daily bus ridership within Marin increased on "basic service" routes. On "local service" routes ridership declined sharply until 1984 but has been rising since. By 1990, total ridership levels within Marin had not yet returned to the 1980 level.

D. PARATRANSIT

Paratransit services are provided by the Marin Senior Coordinating Council (MSCC) and the Volunteer Center of Marin. Under contract with various agencies and organizations, the Marin Senior Coordinating Council offers rides to elderly and disabled people upon call, delivers meals, and transports riders to organized activities.

Under contract with various organizations during fiscal year 1985/86, MSCC provided 69,000 passenger trips. According to a January 1987 survey, 48% of the trips were to and from medical appointments. Other trips included recreation (17%), therapy (15%), shopping (12%), work (5%), and school (3%). Almost 48,000 trips were provided under contract with the Marin County Transit District. The Transit District contract calls for MSCC to offer general paratransit service on a first-come, first-served basis. During fiscal year 1989-90, 560 requests for service were denied. Unmet demand may be greater than the denial rate would suggest because consumers may postpone trips, forego trips, or decide not request trips due to previous denials or lack of information about the service.

III. PROJECTIONS

A. HIGHWAY 101 AND SELECTED ARTERIALS

1. Projected Level of Service of Highway 101

Projections from the Highway 101 Corridor Study and the Marin County transportation model indicate that Highway 101 will suffer serious deterioration in Level of Service unless improvements are made. According to the analysis performed for the Corridor Study, with only limited improvements in transit service and the 1991 highway capacity, the freeway will suffer 36 miles of severe congestion from Mill Valley through Santa Rosa by the year 2005. Severe congestion is defined as Level of Service F with auto speeds decreasing to twenty miles an hour or less in bumper-to-bumper traffic. The Marin County transportation model showed similar results for a projection to the year 2000, where the freeway had Level of Service E or F from Greenbrae to Novato, assuming no improvements in the existing capacity of the freeway.

The analysis of traffic impacts upon the freeway indicates that the transportation system expected to be in place by the year 2000 cannot accommodate the projected increase in travel demand without continued declines in level of service. The analysis also confirms

that a significant increase in the capacity of the 101 Corridor freeway and transit system will be needed to accommodate the new development projected in the Countywide Plan.

2. The Recommended Plan for the 101 Corridor

The package of transportation improvements for the 101 Corridor recommended in this plan is similar to the Preferred Alternative, which was adopted in 1989 by the 101 Corridor Action Committee, following six years of study. The Highway 101 Corridor Study examined eleven different transportation system packages to assess their relative ability to accommodate the projected travel demand in the year 2005. The transportation system for the 101 Corridor used in this plan includes the following new facilities:

Rail transit service running between Santa Rosa and the Larkspur Ferry Terminal on the NWP right-of-way;

Increased ferry service to San Francisco;

Increased bus service, with Central and Northern Marin buses routed to deliver passengers to the train;

Completion of the High Occupancy Vehicle (carpool) lanes through Marin and north to Windsor in Sonoma County;

Auxiliary lanes between selected freeway interchanges;

East of Highway 101, roadways to serve future development in the North San Rafael and Novato areas, as a condition of project approval. When general plan amendments underway in these areas are complete, the new land use designations will be tested to determine the type and location of roads needed to serve proposed development.

An overpass crossing Highway 101 in the Las Gallinas Valley Planning Area (Merrydale overcrossing) and a new northbound on ramp;

An extension of Andersen Drive from Jacoby Street to B Street in San Rafael;

Improvements to several interchanges with Highway 101 (Shoreline Highway, Tiburon Boulevard, Nellen Avenue, Sir Francis Drake Boulevard, Lucas Valley Road, Atherton Avenue);

New Park and Ride lots at Tamalpais Drive, Rowland Boulevard, and other locations where feasible.

The development of rail transit is based on the assumption that both Marin and Sonoma Counties will cooperate to provide transit service between the counties and to San Francisco. Train service between the two counties would require that Sonoma County purchase the Northwestern Pacific right-of-way and fund the portion of the rail system within its jurisdiction. While Marin and Sonoma Counties consider pursuing train service on the Northwestern Pacific right-of-way, Marin County should proceed with construction of the High Occupancy Vehicle lanes on Highway 101. During the rail transit decision-making process, adequate bus transit service should be provided to meet projected travel demand.

If bi-county train service is not implemented on the NWP right-of-way, Marin County will need to provide the transportation system capacity that would have been provided by the train. It is assumed that Marin County will not provide train service on its own. In this case, a bus-service equivalent to the transit service that would have been provided by the train should be provided. The additional buses would use the High Occupancy Vehicle lanes on Highway 101.

The County, in coordination with Marin's cities and towns, should also implement an aggressive Transportation System Management program to reduce vehicle demand for road space during the commute hours.

The recommended plan for the 101 Corridor has been tested as part of the Highway 101 Corridor Study and the Countywide Plan computer modeling program. The Corridor Study modeled the morning peak hour commute and the Countywide Plan effort modeled the evening peak hour commute.

The results of the Highway 101 Corridor Study, when using the general plan projections of Marin, Sonoma, and San Francisco Counties for 2005, show that a combination of rail transit and highway improvements produced Levels of Service ranging between C and F on Highway 101. If the development policies in those plans were realized, the worst congestion, Level of Service F, would occur at Puerto Suello Hill. Other areas of Highway 101 would operate with little or no congestion, Level of Service D or better.

The Countywide Plan transportation model produced similar results for northbound evening commute traffic. Highway 101 was projected to operate at Level of Service D/E at Puerto Suello Hill, and Level of Service D or better for the remaining portions. Table T-2 shows Level of Service at selected points on Highway 101. The Highway 101 Corridor Study uses the year 2005 as a projection date, while the Countywide Plan model uses "buildout" for projected development but assigns no year to buildout. The results of the two projections, each of which was based on different technical procedures, are compatible.

**Table T-2. Projected Level of Service on Highway 101
With Recommended Improvements**

| Screenline | Preferred Alternative Highway 101 Corridor Study (Morning Southbound Traffic) | Preferred Alternative Countywide Plan (Evening Northbound Traffic) |
|--------------------|--|---|
| Marin/Sonoma line | C | C |
| Pacheco Hill | D | D |
| Puerto Suello Hill | F | D/E |
| Cal Park Hill | C | D |
| Alto Hill | C/D | C/D |
| Golden Gate Bridge | C | D |

3. Projected Level of Service on Selected Arterials

In preparing the Congestion Management Program, the Countywide Planning Agency modeled a land use projection for the year 2000. The purpose of the modeling exercise was to determine if any Highway 101 segments fell below Level of Service E or any arterial segments fell below Level of Service D.

The transportation model showed that, in addition to those segments which were identified in the Existing Conditions section of this Element as operating at service level F, four arterial segments will fall below Level of Service D in the year 2000:

Bel Marin Keys Boulevard from Highway 101 to Hamilton Drive in Novato;

Novato Boulevard from San Marin Avenue to Grant Avenue in Novato;

South Novato Boulevard from Sunset Parkway to Highway 101 in Novato;

Tiburon Boulevard from Highway 101 to Redwood Frontage Road in Tiburon.

All other arterial segments would operate at Level of Service D or better. The exceptions would be the segments identified in the Existing Conditions section as currently operating at Level of Service F. Due to the capacity limits imposed by environmental constraints, some of these segments will continue to operate at Level of Service F in the future. Bel Marin Keys Boulevard and South Novato Boulevard in Novato would improve to Levels of Service A and B, respectively, due to capacity increases. Improvements are also recommended which will increase Tiburon Boulevard's level of service to D at buildout.

B. PUBLIC TRANSIT

The Countywide Plan transportation model estimates the use of public transit using factors developed by the Metropolitan Transportation Commission. The MTC mode choice model focuses on home to work trips, since commuters are most likely to use public transit for those trips.

The transit system tested at buildout includes rail transit service from Larkspur Ferry to Santa Rosa, increased ferry service, and increased bus service, particularly in southern Marin. This system would be expected to attract a substantially greater number of transit riders than attracted by the current service.

As was reported in the Existing Conditions section, the greatest use of public transit occurs on commute trips to San Francisco. The model estimates that the use of transit for commute trips (average daily home-based work trips) from Marin to San Francisco would increase from 16% to 26% at buildout. This is a 63% increase in the number of transit trips. Similarly, transit's share of commute trips from Sonoma to San Francisco is projected to increase from 19% currently to 33% at plan buildout. This is a 74% increase in the number of transit trips. Transit's share of commute trips from Sonoma to Marin is projected to increase from 1% currently to 4% of total commute trips at buildout. Transit use for local trips, estimated at just 2% currently, is projected to remain at 2% in the future.

The significant increase in transit use projected for the longer commute trips is an important contributor to the fact that Highway 101 is projected to experience only limited congestion when all highway improvements and transit services have been constructed and are in operation.

C. RECOMMENDED IMPROVEMENTS

In order to mitigate the transportation impacts of the buildout development as recommended in the Countywide Plan and the general plans of each city, improvements to highways, local roads, and transit service in the county need to be provided. The improvements necessary to achieve the service level results on Highway 101 shown in Table T-2 have been described above and are recommended to be included in a countywide capital improvement program. In addition, improvements to the arterial street system are also recommended in order to achieve the level of service recommended in Policy T-1.1.

During the last twenty years, the County and cities have established a process for choosing and ranking road improvements. Projects are submitted to the Metropolitan Transportation Commission for inclusion in the Regional Transportation Improvement Program. In turn, the Metropolitan Transportation Commission submits accepted projects to the State of California for inclusion in the State Transportation Improvement Program. Projects included in the State Program are allocated both State and Federal funds.

1. Recommended, Funded Improvements

For fiscal year 1992, the cities and County have created a Capital Improvement Program of projects to be submitted to the Metropolitan Transportation Commission. This list contains projects already adopted and funded by the State as well as projects proposed for funding. Because the funding cycle is seven years, the group of funded projects receives allocations over the seven year period. The unfunded projects may receive funding as more money becomes available.

Table T-3 lists projects which are fully funded in the 1992 Capital Improvement Program. The funds for these projects are expected to be made available over the seven year funding cycle.

Table T-4 lists transit improvements proposed by the Golden Gate Bridge District in its Five Year Short Range Transit Plan.

The funding for these projects is not guaranteed but is expected to be available from a combination of Golden Gate Bridge toll revenue and Federal subventions. The timing of the funding for these projects might result in the projects taking longer than five years to complete.

Table T-5 contains the bicycle and pedestrian improvements included under the Transportation Development Act (TDA) Article 3 program. The TDA funds are expected to be available but are not guaranteed.

2. Recommended, Unfunded Improvements

To achieve the Level of Service on Highway 101 and on arterial streets recommended under the policies of the Countywide Plan, Marin County's transportation system must have all of the capital improvements recommended in the Plan or a system which has equivalent capacity. As was listed above, these are: High Occupancy Vehicle lanes on Highway 101 from Mill Valley to Sonoma County, rail transit service between Larkspur and Santa Rosa, increased ferry service to San Francisco, increased bus service, and McInnis Drive between Civic Center Drive and Rowland Boulevard. The Long Range Capital Improvement Program shown in Table T-7 has a total unfunded cost of \$646.4 million in 1992 dollars.

Table T-3. Funded Improvements in 1992 State Transportation Improvement Program
(Cost estimates in millions of 1992 dollars)

| Route | Location | Description | Cost (millions) | Const. Date |
|--------------------------------------|---|----------------------------------|--------------------|----------------|
| Highway 101 | Rowland Boulevard Interchange | Park & Ride Lot (330 vehicles) | 1.69 | 1992 |
| Highway 101 | Merrydale Rd. (so. of Manuel Freitas) | New Overcrossing | 4.62 | 1992 |
| Highway 101 | Manuel Freitas Parkway Interchange | Northbound on-ramp | 5.45 | 1992 |
| Highway 101 | Lucas Valley Road Interchange | New Southbound on/off ramps | 3.86 | 1995 |
| Highway 101 | From San Pedro Road to Mission Avenue | HOV lanes, southbound auxiliary | 28.80 | 1996 |
| Highway 101 | Rowland Boulevard Interchange | Modify Interchange | 4.30 | 1992 |
| Highway 101 | From Sir Francis Drake Boulevard to I-580 | Northbound Auxiliary lane | 5.84 | N.A. |
| I-580 | Bellam Boulevard | Relocate interchange | 20.00 | 1996 |
| Highway 101 | Marin City interchange | Rebuild interchange | 4.80 | 1993 |
| Highway 101 | Tamalpais Drive | Park and Ride lot (225 vehicles) | .94 | 1995 |
| Andersen Drive | West Francisco Boulevard to Second Street | Extend Andersen Drive | 7.50 | 1995 |
| Highway 101 | Miller Creek Road to N. San Pedro Road | Southbound auxiliary lane | 5.26 | 1996 |
| Atherton Avenue | From Olive Avenue to Highway 37 | Left Turn Lanes | 1.26 | 1993 |
| South Novato Boulevard | From Warner Creek to Highway 101 | Widen to four lanes | 6.10 | 1993 |
| East Sir Francis Drake Boulevard | From Highway 101 to Ferry Terminal | Widen to six lanes | 1.43 | 1992 |
| Sir Francis Drake Boulevard | At Fairfax city limits | Shoulder Improvements | .78 | Done |
| Sir Francis Drake Boulevard | Larkspur Ferry Terminal | Improve automobile access | .45 | 1992 |
| Sir Francis Drake Boulevard | White's Hill, San Geronimo | repair slide areas | .83 | 1992 |
| Sir Francis Drake Boulevard | Highway 101 to Laurel Dr. | Coordinate signals | .95 | 1992 |
| Various Streets | Downtown San Rafael | Signal Improvements | .69 | N.A. |
| Nellen Avenue | Fifer Ave to Redwood Hwy, Corte Madera | Improve under crossing | 1.42 | 1993 |
| Center Road | San Anselmo | Re-alignment | .16 | 1993 |
| Various roads | Mill Valley | arterial improvements | .10 | 1994 |
| Miller Ave/La Goma Ave | Mill Valley | signals | .14 | 1994 |
| Bridgeway Blvd. | Sausalito | re-alignment | .10 | 1993 |
| Tiburon Blvd. | Tiburon | Bicycle parking for ferry | .01 | 1993 |
| Industrial Way | At Highway 101, Larkspur | Signals | .20 | 1992 |
| East Blithedale/Tower Road | Mill Valley | Signals | .15 | 1994 |
| Bicycle Plan | County of Marin | Revisions/feasibility studies | .10 | 1993 |
| Transit Center | San Rafael | Park and Ride Lot | .40 | 1993 |
| Larkspur Ferry | Larkspur | feasibility study for access | .20 | 1993 |
| Total for funded improvements | | | \$108.53 | |

Table T-4. Transit System Improvements
Five Year Short Range Transit Plan, Golden Gate Bridge District
(Cost estimates in millions of 1992 dollars)

| Route | Location | Description | Cost (millions) |
|-------------|--------------------------------------|-----------------------------------|--------------------|
| Bus | | 68 replacement buses | \$21.96 |
| Bus | San Rafael Maintenance Facility | Replace fuel tanks, pipeline | 1.98 |
| Bus | Sir Francis Drake Boulevard | Bus stop improvements | .42 |
| Bus | All facilities | Fuel Tank site remediation | .29 |
| Bus | San Rafael facility | Parking lot resurfacing | .17 |
| Bus & Ferry | | Replace non-revenue vehicles | .22 |
| Ferry | | Replace one ferry vessel | 4.69 |
| Ferry | | Ferry wheelchair elevators | .12 |
| Ferry | Larkspur terminal | Construct fourth ferry berth | .77 |
| Ferry | Sausalito landing | Replace float, extend ramp | 1.09 |
| Ferry | Larkspur terminal | Automatic ticket vending machines | .33 |
| Ferry | San Francisco and Larkspur terminals | Passenger shelters | .53 |
| Ferry | Larkspur | Channel dredging | 4.85 |
| Total | | | 37.42 |

Table T-5. Bicycle and Pedestrian Facility Improvements
(Cost estimates in thousands of 1992 dollars)

| Jurisdiction | Location | Type | Cost (thousands) |
|--------------|--|----------|---------------------|
| Tiburon | "Blackie's Pasture" | Class I | \$16.5 |
| Marin County | Atherton Avenue | Class I | 47.4 |
| Marin County | Sir Francis Drake Boulevard, Lagunitas | Class II | 88.2 |
| Marin County | Sir Francis Drake Boulevard, Inverness | Class II | 33.1 |
| Marin County | Sir Francis Drake Boulevard, Lagunitas (Phase II) | Class II | 248.1 |
| Corte Madera | High Canal Path | Class II | 60.6 |
| Total | | | \$493.9 |

a. Highway Improvements

The cities and County of Marin have created a list of recommended highway and arterial road projects for the Congestion Management Program's Capital Improvement Program, administered by the Countywide Planning Agency. These projects would complete the highway portion of the recommended transportation system and improve major arterials. Several interchange improvements recommended by the Marin County Public Works Department were added to this list. (Interchange projects were not included in the Agency's list because they were to be funded from local sources.) The estimated cost for all these projects is \$264.4 million (in 1992 dollars), and they are mostly unfunded (local traffic impact mitigation fees have been collected for some arterial road and interchange projects). Table T-6 lists unfunded projects proposed in the Countywide Planning Agency's Capital Improvement Program, as well as the interchange projects.

b. Transit Improvements

To complete the list of improvements recommended in the Countywide Plan transportation system, a rail transit system and additional ferries are needed. The Highway 101 Corridor Study estimated the construction cost for a light rail train at \$273 million in 1992 dollars.

A ten year projection for the operating cost of the light rail train is \$45 million in 1992 dollars where the train is assumed to begin operating ten years after project conception. The additional ferries are estimated to cost \$45 million in 1992 dollars with 20-year projected operating costs at an estimated \$19 million in 1992 dollars.

The total 20-year costs of the recommended transit system is \$382 million in 1992 dollars. These projects are currently unfunded.

3. Sources of Transportation Funds

The unfunded portion of the recommended transportation program will be met in part by existing local, State, and Federal funding programs. The table below provides conservative estimates of the funding that would be available to Marin County over a 20 year period from the sources as indicated. Excluded from the table are local and "regional" traffic impact mitigation fees that have not been committed.

| | |
|---|-----------------|
| State Transportation Improvement Program (STIP) | \$ 82.2 million |
| Federal Transit Administration (FTA) | 81.0 million |
| Golden Gate Bridge District Tolls | 54.0 million |
| Proposition 116 Rail Bonds | 11.0 million |
| Total | \$228.2 million |

A potential shortfall of \$418.2 million exists between the cost and the available funding for the recommended transportation plan. Several options are available to make up for the funding shortfall:

a. Developing new sources of local funding

Sales Tax. A one percent sales tax in Marin County dedicated to transportation would generate \$520 million over the 20 year planning period. Combined with existing local, State and Federal funds this is more than enough to fully meet the funding requirements. (The sales tax revenue estimate was provided by the Metropolitan Transportation Commission.)

Traffic Impact Mitigation Fees. These fees are a one-time, lump sum payment from a developer to a local public agency. The fees assist in paying for the capital improvements needed to mitigate the traffic impacts of the proposed project. Traffic impact mitigation fees are currently collected by the Cities of San Rafael, Corte Madera, Larkspur, Tiburon, and the County of Marin.

Regional Traffic Impact Fees. The County and cities should consider regional traffic impact fees to help fund facilities of countywide significance such as Highway 101. Because the traffic generated by new development impacts countywide facilities, sufficient justification may exist for regional fee requirements.

Local governments in Marin would need to cooperate in determining the total cost of proposed regional improvements, the percentage share borne by developers, and the amount of the fee charged to specific projects. A regional fee could be a fixed dollar amount assessed per housing unit and per unit of commercial development or a variable fee based on project location and anticipated impact on regional facilities. Any method of calculating traffic impact mitigation fees would require extensive legal and factual analysis based on specific requirements.

For example, assuming a traffic mitigation fee rate of \$4,000 per peak hour trip generated, the total funds which could be generated over 20 years by traffic mitigation fees would be about \$150 million. The estimate of funds generated is based on the new development recommended in this plan. Obviously, a lower amount of development would mean that a lower level of funds would be available from the traffic fee program.

Assessment Districts. Assessment districts permit a surcharge or surtax on the properties which directly benefit from a public improvement. The charge or tax may be either a one-time or an annual fee.

Table T-6. Unfunded, Recommended Highway and Local Road Improvements
(Cost estimates in millions of 1990 dollars)

| Route | Location | Description | Cost (millions) |
|-----------------------------|--|---|--------------------|
| Highway 101 | From Atherton Avenue to Sonoma County line | North/South HOV lanes; improve Atherton Ave interchange | \$28.44 |
| Highway 101 | From Highway 37 to Atherton Avenue | North/South HOV lanes | 21.63 |
| Highway 101 | Highway 37 | Improve interchange | 30.87 |
| Highway 101 | Ignacio Blvd. | Improve interchange | 8.05 |
| Highway 101 | From Mission Avenue to Interstate 580 | North/South HOV lanes | 34.40 |
| Highway 101 | From Interstate 580 to Sir Francis Drake Boulevard | North/South HOV lanes, auxiliary | 57.37 |
| Highway 101 | Sir Francis Drake Blvd. | Improve interchange | 23.15 |
| Highway 101 | At Nellen Road | New interchange | 10.82 |
| Highway 101 | Tiburon Blvd. | Improve interchange | 2.76 |
| Highway 101 | State Route 1 | Signals and add west bound lane | .77 |
| Bel Marin Keys Boulevard | At Highway 101 | Northbound right turn lanes (two) | N/A |
| South Novato Boulevard | From Redwood Boulevard to Bel Marin Keys Boulevard | New Highway 101 overcrossing, ramps | 12.03 |
| Interstate 580 | At Bellam Boulevard Interchange | Move interchange 1500 feet east | 20.00 |
| Sir Francis Drake Boulevard | From Red Hill Avenue to Olema Road | Widen lanes, add bicycle lanes | 2.68 |
| Sir Francis Drake Boulevard | From Red Hill Avenue to Olema Road | Signal modifications | 2.06 |
| Tiburon Boulevard | From Highway 101 to Redwood Frontage Road | Widen to six lanes | 4.98 |
| State Route 1 | From Flamingo Road to Highway 101 | Widen to 3 and 5 lanes | 4.50 |
| Total | | | \$264.51 |

Note: The cost estimate of the Bel Marin Keys Boulevard project has not been determined.

Table T-7. Recommended Projects, Estimated Costs & Proposed Funding
(Estimated in millions of 1992 dollars)
For Capital Improvement Program

| Project Description | Cost (millions) | Funding (millions) | Funding Source |
|--|--------------------|-----------------------|--|
| High Occupancy Vehicle and auxiliary lanes | \$141.8 | \$90.0 | Sales tax |
| | | 51.8 | State Transportation Improvement Program |
| | | (a) | Regional Traffic Impact Mitigation Fees |
| Freeway interchange improvements | 95.6 | 65.3 | Sales tax |
| | | 17.5 | State Transportation Improvement Program |
| | | 12.8 | Local Traffic Impact Mitigation Fees (b) |
| Local road improvements | 27.0 | 3.9 | Sales tax |
| | | 12.9 | State Transportation Improvement Program |
| | | 10.2 | Local Traffic Impact Mitigation Fees (b) |
| Light rail train capital costs | 273.0 | 217.0 | Sales tax |
| | | 45.0 | Federal Transit Administration |
| | | 11.0 | Rail bond from Proposition 116 |
| Light rail train operating costs | 45.0 | 23.0 | Sales tax |
| | | 22.0 | Golden Gate Bridge District |
| Ferry capital costs | 45.0 | 36.0 | Federal Transit Administration |
| | | 9.0 | Golden Gate Bridge District |
| Ferry operating costs | 19.0 | 19.0 | Golden Gate Bridge District |
| Total | \$646.4 | \$646.4 | |

- (a) The legal authority for levying regional traffic mitigation fees has not been established and the amount of revenue that could be generated has not been calculated.
- (b) Additional local traffic impact fees may be collected.

Tax Increment Financing. Tax increment financing allows public projects to be funded by an increase in property taxes, resulting from increased private investment in the vicinity of the public improvement. Like assessment districts, tax increment districts are difficult to set up and the proceeds must be spent within the benefit district.

Local Taxes/Fees on Vehicle Registration, Licenses, Vehicle Parts, or Fuels. These taxes/fees may fund local transportation projects, although the administrative cost for their collection is high. The State would have to authorize local governments to collect taxes or fees on vehicle registration, licenses or vehicle parts. With the exception of the fuel tax, the potential revenue from these taxes and fees is small.

General Funds. All local governments use some general funds monies to pay for transportation improvements, although Proposition 13 restrictions on raising property taxes limits potential for funding major projects with general fund revenues. The County uses local property taxes from its general fund for road maintenance, minor road improvements, and local transit service (via a contract with the Golden Gate Bridge District).

- b. Reducing the scale of transportation improvements to a level which could be funded from existing resources.

Transportation improvements could be reduced to a level which could be funded from existing resources. This policy would result in significantly increased levels of congestion from Level of Service D (or better) which would result if the recommended transportation plan is implemented. In the past, local policy makers have often found it less burdensome to accept higher levels of congestion (service levels E or F) than to impose the added local taxing burden which would be required to close the transportation program funding gap from local sources. State legislation associated with Proposition 111 (increased gas tax) requires that local governments maintain level of service standards as adopted in the Congestion Management Program. Failure to maintain these standards will result in loss of gas tax revenues and inability of projects in that jurisdiction to compete for State and Federal funds.

- c. Reducing the scale of the transportation program and the amount of new development permitted under local plans.

The amount of additional congestion which would be caused by a policy of not providing the full recommended transportation program could be mitigated, but not eliminated, by reducing the amount of new development which is recommended by the Countywide Plan and city general plans. Because some portions of Highway 101 currently operate at an

unsatisfactory Level of Service (Level F), a reduced transportation improvement program may not be sufficient to relieve existing congestion and carry the trips generated by new development. This approach would need to combine a somewhat reduced scale transportation program with a greatly reduced development program in order to approach the future year goal of Level of Service D or better which is recommended in this plan.

- d. Require transportation improvements to be in place before developments receive final approvals, subject to legal requirements. This approach would not reject new development but would delay development approval until the funding programs can catch up with the costs of transportation improvements.

4. Prioritization of Transportation Projects

The transportation program funding gap requires that the development of the transportation system be accomplished in carefully considered stages. For example, careful study in the Highway 101 Corridor Study revealed that the greatest relief from severe congestion on Highway 101 was provided by completing the HOV lane system in Marin. Until it is clear that the entire recommended transportation program can be funded, the HOV lane project should receive the highest priority for funding.

The total cost for all the unfunded HOV lane projects in Marin County is \$142 million. Since the cost exceeds the projected available STIP funds of \$82.2 million, priorities need to be established for the HOV lane projects. The following list prioritizes the unfunded HOV lane projects as recommended in the Congestion Management Program:

| Priority Rank | HOV Lane Project Description | Cost (1992 \$) |
|---------------|---------------------------------------|-----------------|
| First | Mission Avenue to I 580 | \$34.40 million |
| Second | I 580 to Sir Francis Drake Boulevard | 57.37 million |
| Third | SR 37 to Atherton Avenue | 21.63 million |
| Fourth | Atherton Avenue to Sonoma County Line | 28.44 million |

The portion of the recommended program of transit projects which could be accomplished for the least cost and greatest improvement in service is increased bus and ferry service. Increasing these services should receive first priority for transit funds. The combination of a completed HOV lane system with increased bus service would provide an excellent base for increasing the use of transit by commuters to Marin and San Francisco jobs. The added ferry service would further increase the attractiveness of public transit for the commute to San Francisco.

5. Recommended Capital Improvement Program and Proposed Funding

The recommended combination of highway and local road improvements and transit services could be funded from a variety of sources. Table T-7 lists the major categories of projects, with an example of how each could be funded.

At present, the legal authority for levying regional traffic mitigation fees has not been established. The amount of revenue generated from potential regional fees has not been calculated.

6. Linkage of Future Development With Transportation Improvements

This element focuses primarily on a countywide transportation system composed of Highway 101, major arterials and selected local roads. Impacts on this system are caused by the travel behavior of county residents, residents of other counties who work in Marin, and residents of other counties who travel through Marin to other destinations. Future development in Marin and nearby counties will create changes in travel patterns that will produce additional impacts on the transportation system in Marin.

If funding is available to construct improvements identified in the capital improvement program to keep pace with development in the cities, towns and unincorporated area, then level of service D can be achieved on Highway 101, most interchanges and arterials. If projected development occurs before transportation improvements are in place, then level of service would decline.

This element establishes an average level of service D on Highway 101 as a long-term goal but does not establish a mechanism for requiring that it be achieved prior to development. The County acting alone would not be successful in achieving the level of service by imposing mitigation fees or stating that new development in the unincorporated area shall not be approved until transportation improvements are in place. Since traffic generated by new development in the cities and towns would contribute the majority of additional impacts on the transportation system, the most effective way to link improvements to the transportation system with future development would be a countywide program in which all jurisdictions participate.

The Transportation Element includes a program for local traffic mitigation fees to provide transportation system improvements on arterial streets and freeway interchanges. These mitigation fee programs would be designed and implemented cooperatively by the County and the cities for areas where more than one jurisdiction contributes to traffic on a roadway. The agreements between the County and cities should stipulate that developments should not receive occupancy permits until transportation improvements are in place, if conditions warrant such a stipulation.

For Highway 101, regional mitigation fees may provide a portion of the funding for recommended improvements. Unless all jurisdictions cooperate, there would be no

effective way to coordinate the pace of development with provision of transportation improvements.

A possible mechanism for controlling the pace of development is for each jurisdiction to place a limit on the amount of development it approves each year. One method for calculating such a limit would be to assume that the capital improvements recommended for the Highway 101 corridor would be completed in twenty years, to calculate the number of afternoon peak hour trips which would be generated by all the development allowed in each jurisdiction's General Plan, and to allow only the amount of development each year which would use 1/20th of the total number of trips.

The Countywide Planning Agency, which includes representatives from the cities and the County, should investigate limitations on the pace of development and other mechanisms to coordinate the provision of transportation system improvements with the rate of development.

7. Transportation Planning in West Marin

The County has a long standing policy of preserving the rural character of West Marin. This policy is reinforced by strict agricultural zoning and community plans for the villages of the area. Transportation planning will also reinforce this policy by limiting transportation improvements to projects that enhance safety, but do not increase the capacity of the road network.

Due to the location of major recreational areas in West Marin, visitor traffic produces congestion and parking problems well beyond those expected from local land uses. Visitor traffic produces congestion on 1) Shoreline Highway to Muir Woods and Stinson Beach; 2) Edgewater Road and Panoramic Highway to Mount Tamalpais; and 3) Sir Francis Drake Boulevard to Point Reyes. In order to reduce congestion on these roads and improve the parking situation, the County will cooperate with Caltrans, State and Federal Park Services and local communities to provide alternatives to automobile traffic in West Marin and/or control the demand for access to the recreational areas.

IV. OBJECTIVES, POLICIES AND IMPLEMENTATION PROGRAMS

Objective T-1. Efficient Movement of People and Goods. To have a countywide transportation system that provides for the efficient movement of people and goods and also offers an adequate range of alternate modes of transportation service for the residents of Marin County.

Policy T-1.1

Level of Service Standards. The County shall adopt Level of Service D or better as the goal for all unincorporated streets, except as noted below, and for State highways including: U.S. Highway 101, I-580, SR 1, SR 37, and SR 131. The full implementation of the transportation improvements recommended in this plan will assure that streets and highways will operate at service level D or better at the time of plan buildout.

Because achieving level of service D requires the completion of many currently (1992) unfunded projects, the County shall adopt the level of service standards shown in the Congestion Management Program, as adopted by all Marin County jurisdictions, as interim performance standards. The purposes of establishing a service level performance standard are 1) to conform to the Congestion Management Program, 2) to prioritize transportation system improvements and 3) guide the amount, location and timing of new development. New development is expected to contribute to achieving the Level of Service D goals by implementing traffic mitigation measures such as trip reduction programs, fees and/or physical improvements.

Measurement and Application of the Level of Service Standard. The Level of Service for streets in the unincorporated areas of the County shall be measured at major intersections for peak hour traffic using the methods of TRB Circular 212, the Highway Capacity Manual (HCM), or comparable procedures which may be adopted by the County. Sir Francis Drake Boulevard from U.S. Highway 101 to Bon Air Road, which currently operates at Level of Service F during afternoon peak hours, shall be exempted from the service level D standard due to the impact on the built and natural environments which would result if the street were widened to provide additional capacity.

The level of service performance standard on U.S. Highway 101, Interstate 580 and State Route 37 shall be E with the following exceptions: Interstate 580 from U.S. 101 to Bellam Boulevard in San Rafael, U.S. 101 from Sir Francis Drake Boulevard in Greenbrae to North San Pedro Road in San Rafael, U.S. 101

from Atherton Avenue in Novato to the Sonoma County line and Highway 1 from Flamingo Road in Tamalpais Valley to U.S. 101. These excepted road segments are permitted to operate at level of service F as provided for in the Congestion Management Plan until recommended improvements are in place.

The method to establish service level on Highway 101, Interstate 580 and State Route 37 shall be the relationship between traffic volume and roadway capacity (V/C Ratio) as described in the HCM for freeways. Traffic volumes shall be measured at the peak hour to determine level of service.

Relationship Between Service Level Standards and Approval of New Development. The County shall cooperate with cities to maintain interim level of service standards and achieve level of service goals for local streets. The County shall apply the growth management policies stated in the Community Development Element (CD-7.1, CD-7.2, CD-7.3 and their associated programs) and growth management policies in Community Plans to new development. The traffic impact mitigation measures described in this Transportation Element, Community Plans and the Congestion Management Program shall also be applied to new development (e.g. trip reduction measures, fees, physical improvements). When cooperative agreements between the cities and the County have been established, the occupancy permits for new development projects should not be permitted in unincorporated areas of the county until the funding for transportation improvements needed to maintain service level standards on arterial streets has been guaranteed.

It is the intent of the County to ensure that interim service level standards are maintained and the Level of Service goal on the freeway and State roads are also achieved. However, most of U.S. Highway 101 currently operates at service level F and new development by itself cannot provide enough of the funding needed to correct the existing service level deficiencies. New development would contribute to the funding of freeway improvements through the regional mitigation fee program as described in Program T-1.3b. Other County, State, and Federal funds will be required to complete the improvements necessary to maintain Level of Service standards and achieve the Level of Service goal. The approval and occupancy of new development shall be managed to minimize impact on the freeway system. Countywide programs should be developed which help to pace development with related funded improvements.

Program T-1.1a Adopt a Capital Improvement Program. The County shall adopt a Capital Improvement Program (CIP) which contains projects designed to achieve the Level of Service standards. The County shall coordinate with the cities to create a CIP for submittal to the Countywide Planning Agency. Projects must conform to standards in the Congestion Management Program and conform with rules established by the Bay Area Air Quality Management District regional air quality standards.

The County shall prioritize the projects in the CIP based on the criteria provided in the Plan: completion of the HOV system on Highway 101 shall be the highest priority highway project and expansion of the bus and ferry system shall be the highest priority transit projects.

Program T-1.1b Traffic Impact Assessment and Mitigation. The Countywide Planning Agency should determine the traffic impacts of development on state freeways and highways in the Congestion Management Plan designated network. The County shall determine the traffic impacts of development on local unincorporated area roads and intersections both within and outside of the Congestion Management Agency designated network. The County shall require mitigation of all traffic impacts which cause level of service to drop below the adopted standards for local unincorporated roads (including standards established in Community Plans). Mitigations include, but are not limited to: transportation system improvements in the vicinity of the project; fees to help fund improvements in the vicinity of the project; Transportation System Management activities which reduce potential impacts of the project; and/or redesign of the project. (See Community Development Element programs CD-7.2b, CD-7.2c and CD-7.2d; Transportation Element policy T-1.4)

Program T-1.1c Linkage of Future Development with Transportation Improvements. The Countywide Planning Agency should develop a program to coordinate the pace of development in all jurisdictions with the provision of transportation system capacity.

Program T-1.1d Traffic Impact Monitoring of Congestion Management Program Transportation System. Within the unincorporated area, the County shall monitor the traffic impacts of development on the portion of the Congestion Management Program designated transportation system.

Program T-1.1e

Transportation System Management Program and Trip Reduction Ordinance. The County shall adopt a Transportation System Management Program and Trip Reduction Ordinance as required by the Congestion Management Program. The purpose of the TSM Program and ordinance is to improve the operating efficiency of the transportation system and reduce vehicle travel demands upon the transportation system.

Methods to improve the operating efficiency of the system include traffic signal timing and ramp metering on Highway 101. Methods of reducing vehicle travel demands include programs to encourage the use of transit, vanpools, carpools and bicycles; alternate work schedules for employees; telecommuting and satellite work centers (Policy CD-3.6); live/work space and cottage industries (Policy CD-3.7); self employment and home occupations (Policy CD-3.8); and limitations on the availability of parking.

Program T-1.1f

Transportation System Modeling. The County shall maintain transportation system modeling capability for the purpose of providing estimates and projections of trip generation, transportation demand, and Level of Service on the road network and transit routes within the modeling system.

Program T-1.1g

Local Transit Services Plan. The County, in cooperation with the cities of Marin, shall adopt a Local Transit Services Plan to guide the provision of local transit service. The plan shall contain service standards including, but not limited to, hours of operation, routes, and frequency of transit vehicle arrival. In addition, the plan should contain design guidelines for bus shelters and posting of bus schedule information.

Program T-1.1h

Cooperate With Countywide Planning Agency, Bay Area Counties and Cities. The County shall cooperate to the fullest extent possible with the Countywide Planning Agency as it carries out its functions concerning countywide land use planning, the linkage of future development with provision of transportation improvements, and the Congestion Management Program. The County shall also cooperate to the fullest extent possible with other Bay Area counties, especially Sonoma County, and cities to coordinate transportation system planning. (see Community Development Element policies CD-6.6 and CD-6.7)

Policy T-1.2

Pursue All Funding Sources. The County, in cooperation with the cities, shall pursue all possible funding sources in order to provide the improvements necessary to maintain Level of Service standards.

Program T-1.2a

Use Local, State, and Federal Funding Sources. The County shall aggressively apply for funding from State and Federal sources as it becomes available. Where appropriate, the County shall use local sources such as general funds, fees, privately funded improvements, user charges, or local taxes.

Program T-1.2b

Monitor the Success of Funding Development Programs. The achievement of the service level goals of this plan is dependent on the successful development of new funding sources for the construction of transportation improvements.

The Department of Public Works shall annually report to the Board of Supervisors the status of the funding development program including: the results of local initiatives, the funds which have been generated by local and regional mitigation fee programs, and the funds available from State and Federal subvention programs. If at the end of a five year monitoring period the gap between funds needed and funds available has not been significantly closed, the policies of this plan on service level standards and on the timing and amount of new development shall be reviewed in terms of the lack of available transportation system funding.

Policy T-1.3

Fair Share For Transportation System Improvements. New development should pay a fair share of the costs for providing local and regional transportation system improvements necessary to serve new development.

Program T-1.3a

Establish Local Traffic Mitigation Fees. The County shall establish traffic mitigation fees to be assessed on new development. The fees shall cover a reasonable share of the costs of providing local transportation improvements needed for serving new development in the unincorporated area. Local improvements are defined as those improvements to streets within the vicinity of new development. If the vicinity of the development includes areas within incorporated cities, the County shall consult with cities to establish a joint mitigation fee program. The fee may vary by location according to the cost of improvements needed in the vicinity and the nexus with the proposed development.

Program T-1.3b

Establish Regional Traffic Mitigation Fees. The Countywide Planning Agency should establish regional traffic mitigation fees in order to assess new development with a reasonable share of the costs of providing transportation improvements of countywide importance needed to serve that development.

Policy T-1.4

Transportation Policies in Community Plans. The County shall incorporate Level of Service standards, recommend transportation system improvements, and adopt additional policies as needed in community plans. These plans will address transportation issues specific to unincorporated communities with Community Plans. Community Plans may establish higher Level of Service standards than those established in the Countywide Plan.

Objective T-2. Meet the Needs of the Elderly, Persons with Disabilities, and the Transit-Dependent. To ensure that the transportation needs of the elderly, persons with disabilities, and the transit-dependent are met through a combination of fixed route transit and specialized paratransit service.

Policy T-2.1

Paratransit Service. The County shall fund paratransit services and integrate these services with fixed route transit service.

Program T-2.1a

Contract With Private Paratransit Service Operators. The Marin County Transit District shall contract with private paratransit service operators to provide general paratransit services according to the draft "Marin Paratransit Development Plan" (August 1990).

Policy T-2.2

Coordinate Paratransit Services. The County shall coordinate various paratransit services to meet the needs of transit-dependent residents and ensure that service providers operate in the most efficient manner possible.

Program T-2.2a

Transit District Coordinates Paratransit Services. The Marin County Transit District shall: 1) provide information and referral service to paratransit customers and social service agencies; 2) coordinate the operations of service providers to maximize service levels and meet the needs of potential customers; and, 3) coordinate paratransit service with accessible fixed route transit service.

Objective T-3. Civilian Airport Facilities. To provide civilian airport facilities for general aviation and emergency purposes.

Policy T-3.1 **General Aviation at Gnoss Field.** The County Airport at Gnoss Field shall be the only civilian airport facility and be used only for general aviation. Improvements at Gnoss Field shall be made in accordance with the Airport Master Plan for Marin County Airport (adopted, 1989). The heliport and seaplane bases in Richardson Bay shall remain to serve water-oriented visitor and commercial uses.

Objective T-4. Affordable Public Transportation. To provide affordable public transportation service to all areas of the county.

Policy T-4.1 **Provide For Fixed Route Public Transit Service.** The County shall provide fixed route public transit service to all areas of the county by contracting with transit service providers.

Program T-4.1a Contract with Transit Service Providers for Fixed Route Transit Service. The County shall contract with transit service providers to obtain fixed route transit service in accordance with the Local Transit Services Plan.

Program T-4.1b Provide Park and Ride lots. The County shall cooperate with the California Department of Transportation and the Golden Gate Bridge District to find additional lots for commuters to park their cars and use public transit.

Program T-4.1c Post Schedules and Maps. Transit service providers should post current transit schedules and maps at all transit stops and other key locations, to assist the public in utilizing transit services.

Program T-4.1d Provide All-Weather Bus Shelters. The County should support and encourage the provision of bus shelters which adequately protect transit riders from inclement weather.

Objective T-5. Bicycle and Pedestrian Access. To provide bicycle and pedestrian access among residential neighborhoods, employment centers, shopping areas, and recreational facilities.

Policy T-5.1 **Improve Bicycle Access.** The County shall ensure that areas without bicycle access to other parts of the county receive transportation system improvements that allow bicycle access.

Program T-5.1a Create a Bicycle Policy Map. The County shall create a Bicycle Policy Map, coordinated with city plans, which designates potential access ways between areas of the county that currently do not have adequate access.

Program T-5.1b Use Development Review Process. The County shall use the development review process to implement bicycle access policies, subject to nexus requirements.

Program T-5.1c Developers Provide Bicycle Access and Storage. The County shall consider bicycle transportation needs in the review of development projects, and where appropriate, shall require provision of bicycle access between a proposed development and other parts of the County through dedication of easements and construction of bicycle access ways which connect with other bicycle access ways.

The County may also require developers to provide secure and weatherproof bicycle storage facilities in their projects.

Program T-5.1d Bicycles in the Transportation System Management Program. The County shall integrate bicycle use as an alternate transportation mode in the Transportation System Management Program. Transportation coordinators shall promote the use of bicycles among Marin residents and employees and shall work with schools, recreation facilities, community groups, and employers to recommend bicycle use.

Policy T-5.2 **Bikeways Committee.** The Bikeways Committee of the Parks and Cultural Commission shall advise the County in matters relating to bikeways and bicycle transportation and promote bicycle use throughout the county.

Policy T-5.3 **Improve Pedestrian Access.** The County shall work to provide transportation system improvements that allow pedestrian access.

Program T-5.3a Use Development Review Process. The County shall use the development review process to implement pedestrian access, such as provision of sidewalks and pedestrian connections to adjacent areas.

Program T-5.3b Consider Pedestrian Needs in Design of Road Projects. The County shall plan for pedestrian access in designing street and road projects. Provision of pedestrian paths or sidewalks and

timing of traffic signals to allow safe pedestrian street crossing shall be included.

Policy T-5.4 Adequate Transportation Access to Schools. The County should work with local communities to ensure that school children have adequate transportation routes available, such as a local pedestrian or bike path, or local bus service.

Objective T-6. Minimize Environmental Disruption and Land Condemnation for Transportation Projects. To minimize environmental disruption and condemnation of private or publicly owned land due to implementation of transportation projects.

Policy T-6.1 Minimize Environmental Disruption and Land Condemnation. The County shall minimize environmental disruption and condemnation of private or publicly owned land due to implementation of transportation projects and encourage other public and private agencies to do likewise.

Program T-6.1a Coordinate with Transportation Agencies. The County shall coordinate with public and private transportation agencies such as the California Department of Transportation to minimize environmental disruption and condemnation of private or publicly owned land for purposes of implementing transportation projects.

Objective T-7. Maintain the Rural Character of West Marin. To maintain the rural character of West Marin by maintaining the transportation system at a rural scale.

Policy T-7.1 Limit Road Improvements to Safety Enhancements. The County shall maintain all roads in West Marin as two-lane routes with improvements limited to those that enhance safety only.

Program T-7.1a. Maintain the Safety of West Marin Roads. The County shall undertake minor projects to maintain and enhance the safety of routes in West Marin. Projects will not be undertaken to increase the traffic capacity of West Marin roads.

Program T-7.1b Cooperate with Public Agencies and Local Communities. The County shall cooperate with Caltrans, State and Federal Park Services and local communities to maintain the safety of West Marin routes and create means to control demand for transportation system capacity. Examples of controlling capacity include visitor parking areas in the urban corridor with shuttle service to recreation areas, parking availability notices to limit potential demand, and allocation systems, such as appointments, to control visitor flow to the recreation areas.

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